



# 6J7, 6J7-G, 6J7-GT SHARP-CUTOFF PENTODE

6J7  
6J7-G  
6J7-GT

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

Voltage. . . . . 6.3 . . . . . ac or dc volts

Current. . . . . 0.3 . . . . . amp

Direct Interelectrode Capacitances:

|                             | 6J7 <sup>▲</sup> | 6J7-G        | 6J7-GT       |
|-----------------------------|------------------|--------------|--------------|
| <b>Pentode Connection:</b>  |                  |              |              |
| Grid No. 1 to Plate         | 0.005 max.       | 0.007 max. ● | 0.005 max. ● |
| Input . . . . .             | 7 . .            | 4.6 ● . .    | 4.6 ● . .    |
| Output. . . . .             | 12 . .           | 12 ● . .     | 12 ● . .     |
| <b>Triode Connection: *</b> |                  |              |              |
| Grid No. 1 to Plate         | 2 . .            | 1.8 □ . .    | 1.8 □ . .    |
| Grid No. 1 to Cath.         | 5 . .            | 2.6 □ . .    | 2.6 □ . .    |
| Plate to Cathode.           | 14 . .           | 17 □ . .     | 17 □ . .     |

μuf  
μuf  
μuf  
μuf  
μuf  
μuf

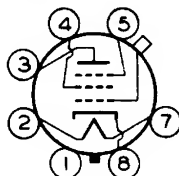
### Mechanical:

|                       |                                |                                |                                           |
|-----------------------|--------------------------------|--------------------------------|-------------------------------------------|
| Mounting Position . . | Any                            | Any                            | Any                                       |
| Max. Overall Length . | 3-1/8"                         | 4-15/32"                       | 3-5/16"                                   |
| Seated Length . . .   | 2-7/16" ± 1/8"                 | 3-3/4" ± 5/32"                 | { 2-5/16"<br>to 2-3/4" }                  |
| Maximum Diameter. . . | 1-5/16"                        | 1-9/16"                        | 1-5/16"                                   |
| Bulb. . . . .         | { Metal Shell<br>MTTBA }       | ST-12                          | T-9                                       |
| Cap . . . . .         | Miniature                      | { Skirted<br>Miniature }       | { Skirted<br>Miniature }                  |
| Base . . . . .        | { Small-Wafer<br>Octal 7-Pin } | { Small-Shell<br>Octal 7-Pin } | { Small-Wafer<br>Octal 7-Pin,<br>Sleeve } |
| Basing Designation    | 7R                             | G-7R                           | GT-7R                                     |

### BOTTOM VIEW

Pin 1 { 6J7-Shell  
6J7-G-Internal  
Shield  
6J7-GT-Base  
Sleeve

Pin 2-Heater  
Pin 3-Plate



Pin 4-Grid No. 2  
Pin 5-Grid No. 3  
Pin 7-Heater  
Pin 8-Cathode

Cap - Grid No. 1

### AMPLIFIER - Class A<sub>1</sub>

### Maximum Ratings, Design-Center Values:

|                                       |           |       |
|---------------------------------------|-----------|-------|
| PLATE VOLTAGE. . . . .                | 300 max.  | volts |
| GRID-No. 2 (SCREEN) VOLTAGE . . . . . | 125 max.  | volts |
| GRID-No. 2 SUPPLY VOLTAGE . . . . .   | 300 max.  | volts |
| PLATE DISSIPATION. . . . .            | 0.75 max. | watt  |
| GRID-No. 2 DISSIPATION. . . . .       | 0.1 max.  | watt  |

(continued on next page)

▲ With shell connected to cathode.

□ Without external shield.

● With external shield connected to cathode.

\* With grid No. 2 and grid No. 3 connected to plate.

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DATA 1

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6J7-G  
6J7-GT



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GRID-No.1 (CONTROL-GRID) VOLTAGE:  
Positive bias value. . . . . 0 max. volts  
PEAK HEATER-CATHODE VOLTAGE:  
Heater negative with respect to cathode. . 90 max. volts  
Heater positive with respect to cathode. . 90 max. volts

### Typical Operation and Characteristics:

|                                                             |                                |      |    |        |
|-------------------------------------------------------------|--------------------------------|------|----|--------|
| Plate Voltage. . . . .                                      | 100                            | 250  | .. | volts  |
| Grid No.3 (Suppressor) .                                    | Connected to cathode at socket |      |    |        |
| Grid-No.2 Voltage. . . . .                                  | 100                            | 100  | .. | volts  |
| Grid-No.1 Voltage. . . . .                                  | -3                             | -3   | .. | volts  |
| Plate Resistance (Approx.) . . . . .                        | 1                              | #    | .. | megohm |
| Transconductance . . . . .                                  | 1185                           | 1225 | .. | μmhos  |
| Grid-No.1 Bias (Approx.) for<br>cathode-current cutoff. . . | -7                             | -7   | .. | volts  |
| Plate Current. . . . .                                      | 2                              | 2    | .. | ma     |
| Grid-No.2 Current. . . . .                                  | 0.5                            | 0.5  | .. | ma     |

### Maximum Circuit Values:

Grid-No.1-Circuit Resistance . . . . . 1 max. megohm

### AMPLIFIER - Class A<sub>1</sub>

*Triode Connection - Grids No.2 & No.3 Connected to Plate*

### Maximum Ratings, Design-Center Values:

PLATE VOLTAGE. . . . . 250 max. volts  
PLATE DISSIPATION (Total). . . . . 1.75 max. watts  
GRID-No.1 VOLTAGE:  
Positive bias value. . . . . 0 max. volts  
PEAK HEATER-CATHODE VOLTAGE:  
Heater negative with respect to cathode. . 90 max. volts  
Heater positive with respect to cathode. . 90 max. volts

### Typical Operation and Characteristics:

|                                      |       |       |    |       |
|--------------------------------------|-------|-------|----|-------|
| Plate Voltage. . . . .               | 180   | 250   | .. | volts |
| Grid-No.1 Voltage. . . . .           | -5.3  | -8    | .. | volts |
| Amplification Factor . . . . .       | 20    | 20    |    |       |
| Plate Resistance (Approx.) . . . . . | 11000 | 10500 | .. | ohms  |
| Transconductance . . . . .           | 1800  | 1900  | .. | μmhos |
| Plate Current. . . . .               | 5.3   | 6.5   | .. | ma    |

### Maximum Circuit Values:

Grid-No.1-Circuit Resistance . . . . . 1 max. megohm

### BIASED DETECTOR

### Typical Operation:

|                           |                                |     |      |      |       |
|---------------------------|--------------------------------|-----|------|------|-------|
| Plate-Supply Voltage♦. .  | 100                            | 100 | 250  | 250  | volts |
| Grid No.3. . . . .        | Connected to cathode at socket |     |      |      |       |
| Grid-No.2 Voltage. . .    | 12                             | 30  | 50   | 100  | volts |
| RF Grid-No.1 Volts (RMS)* | 1.05                           | 1.6 | 1.18 | 1.37 | volts |

♦, ♦♦, \* : See next page.

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DATA 1



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|                        |       |       |      |       |         |
|------------------------|-------|-------|------|-------|---------|
| Cathode-Bias Resistor. | 18000 | 10000 | 3000 | 10000 | ohms    |
| Zero-Sig. Cathode Cur. | 0.063 | 0.183 | 0.65 | 0.43  | ma      |
| Plate Resistor . . . . | 1.0   | 0.25  | 0.25 | 0.5   | megohm  |
| Blocking Capacitor . . | 0.01  | 0.01  | 0.3  | 0.3   | $\mu$ f |
| Grid Resistor* . . . . | 1.0   | 0.5   | 0.25 | 0.25  | megohm  |

## Maximum Circuit Values:

Grid-No.1-Circuit Resistance . . . . . 1 max. megohm

\* Greater than 1 megohm.

♦ Voltage at plate will be "Plate-Supply" voltage minus voltage drop in plate resistor caused by plate current.

★ With these signal values modulated 20%, the voltage output under each set of conditions is 17 peak volts at the grid of the following amplifier. This value is sufficient to insure full audio output from a 6F6 (class A pentode) at 250 volts on plate.

● For the following amplifier tube.

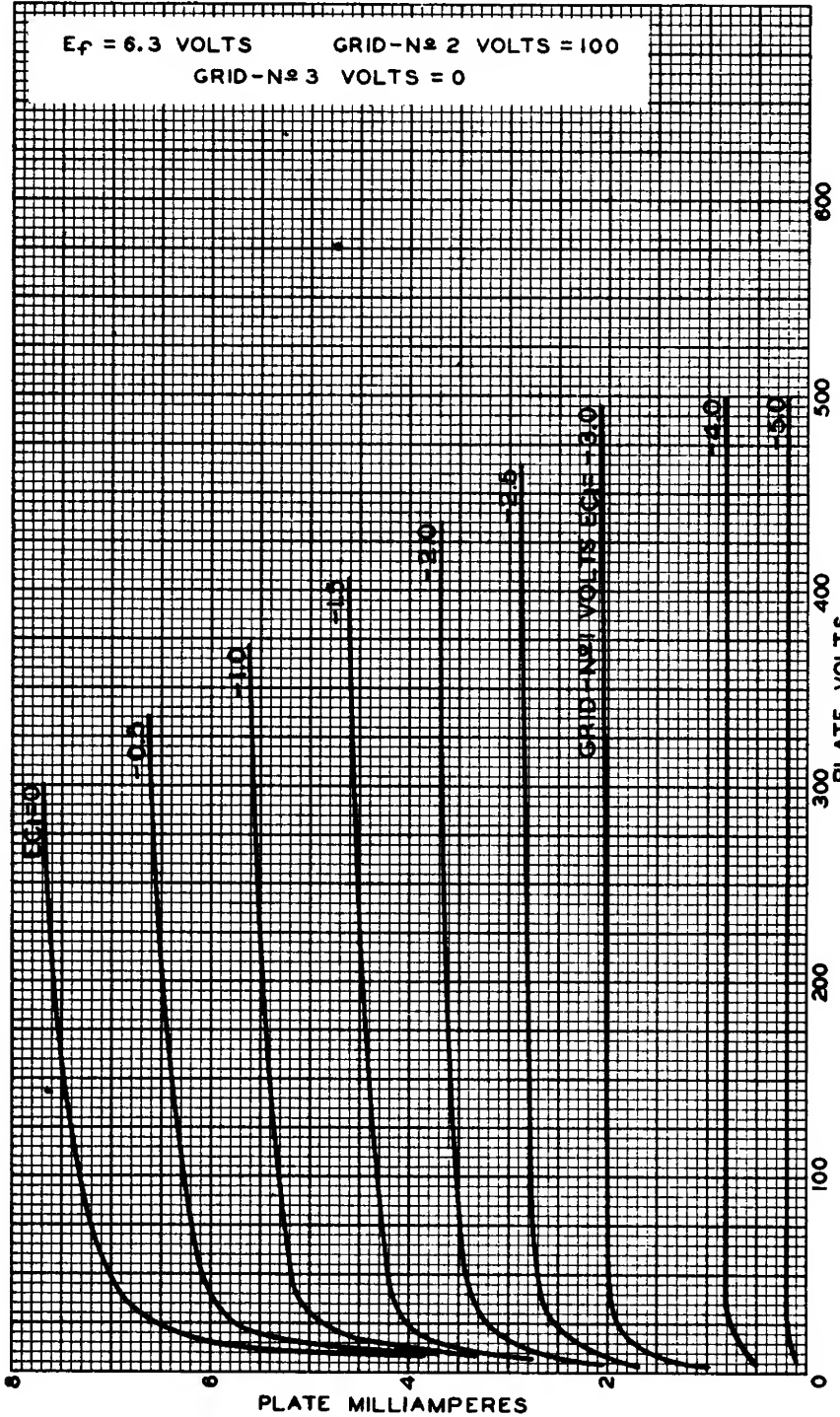
*For additional data, see RESISTANCE-COUPLED AMPLIFIER CHARTS at the front of this Section.*

6J7



6J7

# AVERAGE PLATE CHARACTERISTICS



MAY 12, 1948

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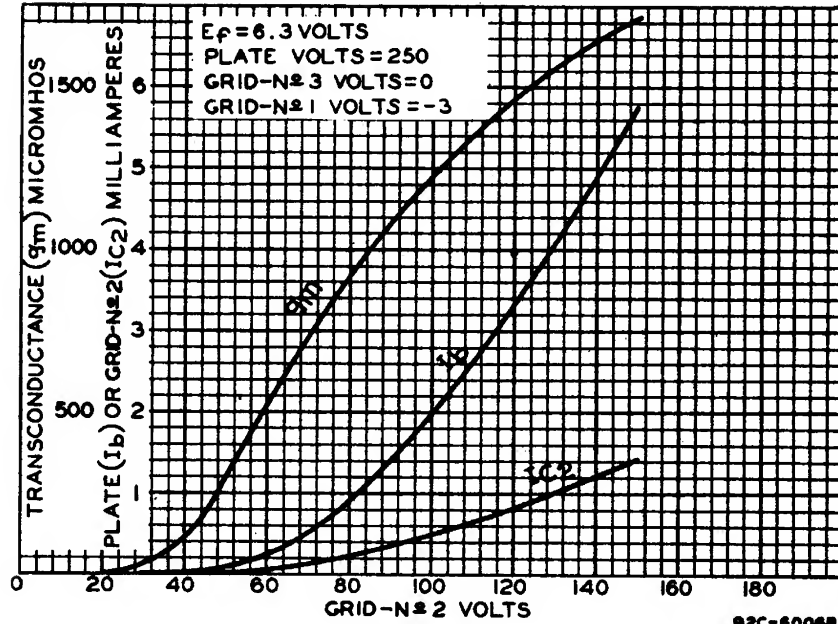
92CM-4741R2



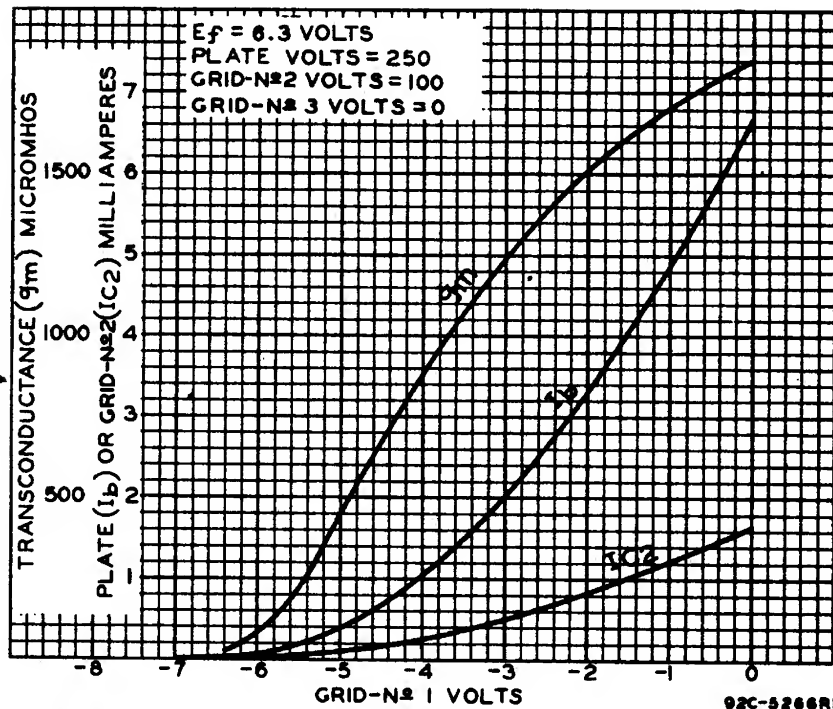
6J7

6J7

### AVERAGE CHARACTERISTICS



### AVERAGE CHARACTERISTICS



MAY 18, 1948

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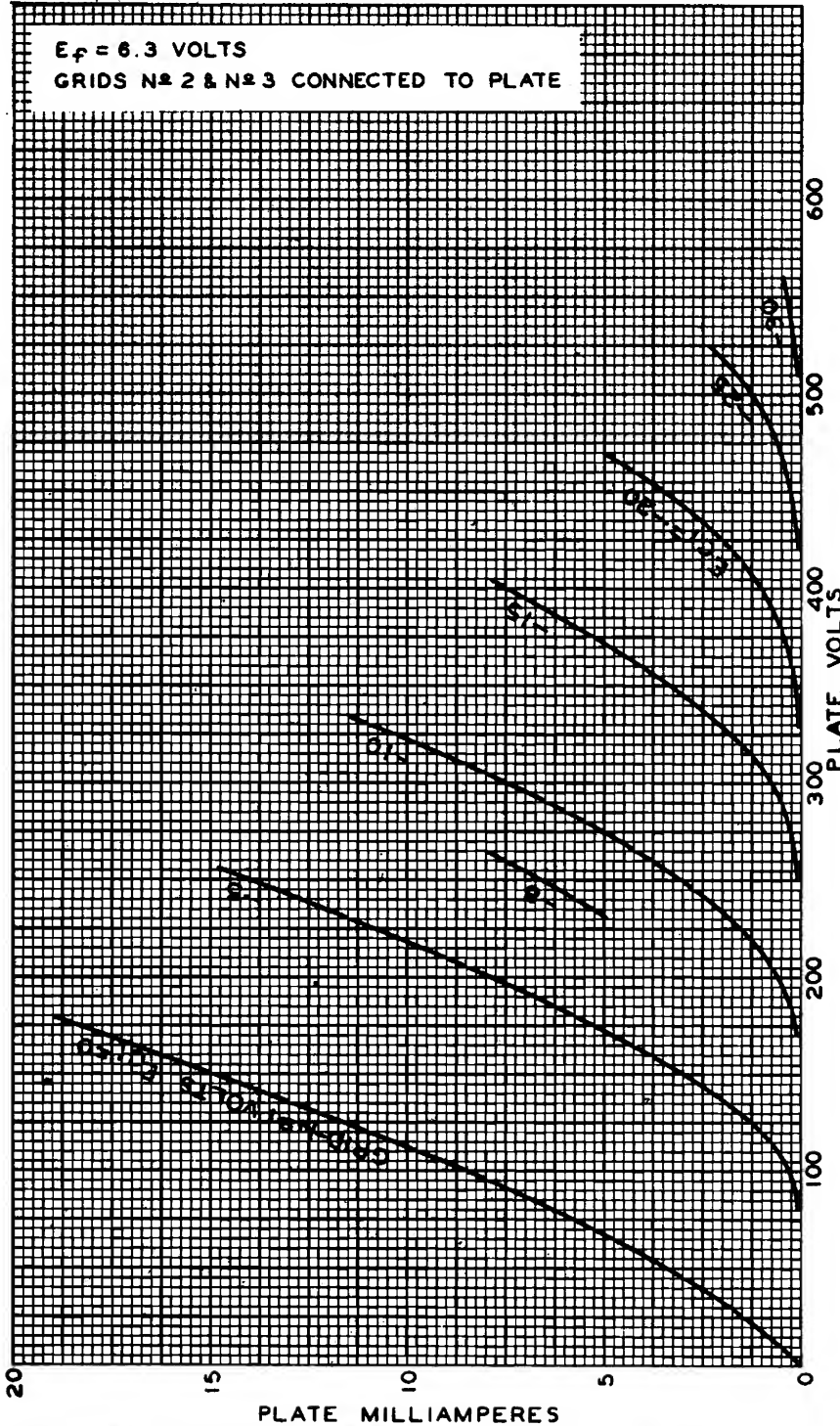
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6J7



6J7

# AVERAGE PLATE CHARACTERISTICS TRIODE CONNECTION



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92CM-4842RI